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A "PILLAR"-TYPE BLACK SPRUCE.

While riding on Route 101-B in Candia, New Hampshire in Dec. 1967 I happened to see what looked like a black pillar or smoke stack in a swamp. Upon investigation the smoke pipe turned out to be a black spruce (*Picea mariana* (Mill) BSP.) about 6 in. in diameter and 35 ft. high with a tightly appressed green crown reaching to the ground. The branches were tightly thatched about the stem. There was no evidence of brooming caused by dwarf mistletoe. The crown was hardly wider than 18 in. at any point. About 10 feet southwest from this tree, (which stood alone, with no other trees of similar height closer than 50 feet) grew a black spruce with almost completely different branching habit. It was barely 5 feet high with a pyramidal crown spreading to a diameter of about 10 feet on the ground. It, too, was densely foliated. No cones were evident on either tree.

Black spruces with narrow or irregular crowns are common, but I have never seen one with such a narrow cylindrical crown. Mutants with crowns of this form have frequently been reported in *Picea abies* L., in fact I have found some myself in northern Sweden. This phenomenon has been discussed by Sylvén (1909), Rubner (1936) and H. Schmidt (1952) among others. Thus Wahlgren (1922) shows in Fig. 184 a "pillar" spruce from Grönsinka National Forest, Sweden and describes it (p. 477) "with short,

Plate 1402.



Pillar-form of Black Spruce in Candia, New Hampshire

densely interwoven branches along the stem, which give the tree a pillar-form appearance." Bouvarel (1954) pictures a less extreme form which he terms "mutant que-nouille" (distaff or bed-post).

Twigs from these black spruces have been sent to University of New Hampshire, Yale and the Arnold Arboretum for propagating.

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NOTES ON FESTUCA ARUNDINACEA AND F. PRATENSIS IN THE UNITED STATES

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Current regional and state floras of the United States provide varied treatments of the European grasses, *Festuca pratensis* Huds. (*F. elatior* L. of American authors; see Terrell 1967) and *F. arundinacea* Schreb. For example, the eighth edition of Gray's Manual recognizes simply *F. elatior* sens. lat. Gleason in Britton and Brown's Illustrated Flora recognizes var. *pratensis* (Huds.) Gray and var. *arundinacea* (Schreb.) Wimm. under *F. elatior*. Hitchcock's Manual of Grasses (1951 ed.; rev. by Chase) recog-